

Applicants' Response

The examiner's response includes two sections: (1) a rejection to claim 33 under 112, second paragraph, and (2) an rejection to claims 1, 6, 11, 15-19, 28, and 30 under 35 U.S.C. 102(b). Applicants respond to below to each of these sections.

(1) Claim Rejections under 35 USC § 112, Second Paragraph

1-2. Claim 33 was rejected under 25 U.S.C. 112, second paragraph, as being indefinite for failing to point out and distinctly claim the subject matter which applicant regards as the invention. The Examiner indicates that there is insufficient antecedent basis for the limitation "the fluid" in line 1, of claim 33.

Claim 33 was amended to be dependent on claim 32. Base Claim 32 provides proper antecedent support for dependent Claim 33 relating to the insulator fluid. Applicants' respectfully request the present rejection under 35 U.S.C § 112, second paragraph, be removed in view of amended claim 33.

(2) Claim Rejections under 35 USC § 102

3-4. Claims 1, 6, 11, 15-19, 28, and 30 were rejected under 35 U.S.C. 102(b) as being anticipated by Hunt.

Hunt was cited for disclosing an electrically insulating material (see "dielectric" in line 2 of abstract) comprising a polymeric component comprising at least one linked voltage stabilizing agent (see "linked voltage stabilized polyolefin compositions", col. 1, lines 69-70), wherein the polymeric component comprises a polymer selected from the group consisting of silicone, a polyurethane, a polyolefin, a polyacetal, a polycarbonate, a polyvinyl, a polyamide, a polyimide, a polyacrylic, a polystyrene, a polysulfone, a polyetherketone, a cellulosic, a polyester, a polyether, a fluoropolymer, and copolymers thereof (see "polyolefin", col. 1, line 70), wherein the electrically insulating material is a solid (see "insulated cable" in lines 61-62 of col. 1), further comprising an article comprising the electrically insulating material (see "cable" in line 62 of col.1), wherein the electrically insulating material is an integral part of the article (see "insulated cable" in lines 61-62 of col. 1), wherein the electrically insulating material is a coating (see "insulated cable" in lines 61-62 of col. 1), further comprising a device comprising the electrically insulating material selected from the group consisting of a transformer, a capacitor, a high voltage cable, and a lead (see "cable" in line 62 of col. 1).


Allowabl Subject Matter

5. Claims 2-5, 7-10 were objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
6. Claims 12-14, 20-27, 29, 31-32, 34-44 were allowed.
7. Claim 33 would be allowed if rewritten to overcome the rejections(s) under 35 U.S.C. 112, second paragraph, set forth in the office action and to include all of the limitations of the base claim and any intervening claims.

The Examiner has indicated that claims 2-5, 7-10 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claim. Applicants have submitted amended claim 1, which includes the limitations of claim 2 (canceling claim 2, and changing the dependency of claims 3-5).

Claims 15, and 28, and 30 have been amended in the same fashion as Claim 1 to include the limitations of previous Claim 2. Claim 11 is dependent on claim 1 and should therefore be allowable. Claim 33 was amended to be dependent on claim 32 to provide proper antecedent basis. Applicants respectfully submit that all the claims at this point should be allowable because they incorporate all the features of previous claims 1 and 2.

Respectfully submitted,

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PATENT TRADEMARK OFFICE

PENDING CLAIMS AS AMENDED
(MARKED UP VERSION)

WHAT IS CLAIMED IS:

1. (currently amended) An electrically insulating material comprising a polymeric component ~~comprising~~ and at least one linked voltage stabilizing agent, wherein the voltage stabilizing agent is covalently lined to or within the polymeric component.
2. (canceled) The electrically insulating material of claim 1 wherein the voltage stabilizing agent is covalently linked to or within the polymeric component.
3. (currently amended) The electrically insulating material of claim 2 wherein the voltage stabilizing agent is covalently incorporated into the backbone of the polymeric component.
- ad 4. (currently amended) The electrically insulating material of claim 2 wherein the voltage stabilizing agent is covalently attached pendant to the backbone of the polymeric component.
5. (currently amended) The electrically insulating material of claim 2 further comprising a spacer between the polymeric and the voltage stabilizing agent.
6. The electrically insulating material of claim 1 wherein the polymeric component comprises a polymer selected from the group consisting of a silicone, a polyurethane, a polyolefin, a polyacetal, a polycarbonate, a polyvinyl, a polyamide, a polyimide, a polyacrylic, a polystyrene, a polysulfone, a polyetherketone, a cellulosic, a polyester, a polyether, a fluoropolymer, and copolymers thereof.
7. The electrically insulating material of claim 6 wherein the polymeric component comprises at least one copolymer selected from the group consisting of an olefin-vinyl copolymer, an olefin-allyl copolymer, a polyether copolymer, and a polyamide copolymer.

8. The electrically insulating material of claim 7 wherein the polymeric component comprises a polyether-bis-amide copolymer.
9. The electrically insulating material of claim 6 wherein the polymeric component comprises at least one polymer selected from the group consisting of silicone, a polyurethane, a polyimide and a polyamide.
10. The electrically insulating material of claim 1 wherein the voltage stabilizing agent comprises an electron acceptor group, an electron donor group, and a double bond or a conjugated ring system.
11. The electrically insulating material of claim 1 which is a solid, a gel, a gum, or a fluid.
12. A method for making an electrically insulating material comprising polymerizing at least one monomer comprising at least one voltage stabilizing agent.
- al 13. A method for making an electrically insulating material comprising copolymerizing at least one first monomer comprising at least one voltage stabilizing agent and at least one second monomer to yield a polymeric electrically insulating material.
14. A method for making an electrically insulating material comprising covalently attaching at least one voltage stabilizing agent pendant to a polymeric backbone to yield a polymeric electrically insulating material.
15. An article comprising an electrically insulating material comprising a polymeric component comprising and at least one linked voltage stabilizing agent, wherein the voltage stabilizing agent is covalently lined to or within the polymeric component.
16. The article of claim 15 wherein the electrically insulating material is an integral part of the article.
17. The article of claim 15 wherein the electrically insulating material is a coating.

18. The article of claim 15 wherein the electrically insulating material is a solid, a gel, a gum or a fluid.

19. The article of claim 15 wherein the polymeric component comprises a polymer selected from the group consisting of a silicone, a polyurethane, a polyolefin, a polyacetal, a polycarbonate, a polyvinyl, a polyamide, a polyimide, a polyacrylic, a polystyrene, a polysulfone, a polyetherketone, a cellulosic, a polyester, a polyether, a fluoropolymer, and copolymers thereof.

20. A medical device comprising an electrically insulating material comprising at least one voltage stabilizing agent.

21. The medical device of claim 20 which is an implantable medical device.

22. The implantable medical device of claim 21 selected from the group consisting of an implantable cardioverter/defibrillator (ICD), an implantable medical lead, an implantable pulse generator (IPG), a pacemaker-cardioverter-defibrillator (PCD), an neurostimulator, and nerve stimulator, a muscle stimulator, an implantable monitoring device, an implantable fluid handling device, a defibrillator, an implantable gastric stimulator, an implantable drug pump, and an implantable hemodynamic monitoring device.

23. The implantable medical device of claim 20 wherein the electrically insulating material comprises a polymeric component comprising at least one linked voltage stabilizing agent.

24. The implantable medical device of claim 23 wherein the voltage stabilizing agent is covalently linked to or within the polymeric component

25. The implantable medical device of claim 24 selected from the group consisting of an implantable cardioverter/defibrillator (ICD), an implantable medical lead, an implantable pulse generator (IPG), a pacemaker-cardioverter-defibrillator (PCD), an neurostimulator, and nerve stimulator, a muscle stimulator, an implantable

monitoring device, an implantable fluid handling device, a defibrillator, an implantable gastric stimulator, an implantable drug pump, and an implantable hemodynamic monitoring device.

26. An implantable medical lead comprising an electrically insulating material comprising a polymeric component selected from the group consisting of a silicone, a polyurethane, a polyamide, a polyimide, and a polyether-bis-amide copolymer, wherein the polymeric component comprises at least one linked voltage stabilizing agent.

27. The implantable medical lead of claim 26 selected from the group consisting of a cardiac pacing lead, a tachycardia lead and a neurological lead.

28. (currently amended) A device comprising an electrically insulating material comprising a polymeric component ~~comprising~~ and at least one linked voltage stabilizing agent, wherein the device is selected from the group consisting of a transformer, a capacitor, a high voltage cable, and a lead, and wherein the voltage stabilizing agent is covalently lined to or within the polymeric component.

29. A capacitor comprising a solid dielectric layer comprising an electrically insulating material comprising a polymeric component comprising at least one linked voltage stabilizing agent.

30. (currently amended) A high voltage cable comprising an electrically insulating material comprising a polymeric component ~~comprising~~ and at least one linked voltage stabilizing agent, wherein the voltage stabilizing agent is covalently lined to or within the polymeric component.

31. An adhesive comprising an electrically insulating material comprising silicone comprising at least one linked voltage stabilizing agent.

32. An electrically insulating fluid comprising silicone comprising at least one linked voltage stabilizing agent.

33. (currently amended) The insulating fluid of claim 26 32 which is a transformer fluid or a capacitor electrolyte fluid.
34. A polymer blend comprising a first polymer comprising at least one linked voltage stabilizing agent and a second polymer.
35. The polymer blend of claim 34 wherein the first polymer comprises a polymer selected from the group consisting of a silicone, a polyurethane, a polyolefin, a polyacetal, a polycarbonate, a polyvinyl, a polyamide, a polyimide, a polyacrylic, a polystyrene, a polysulfone, a polyetherketone, a cellulosic, a polyester, a polyether, a fluoropolymer, and copolymers thereof.
36. The polymer blend of claim 35 in which at least one of the first and second polymers is crosslinked.
37. The polymer blend of claim 35 comprising an interpenetrating polymer network.
38. The polymer blend of claim 35 in which the first and second polymers are not crosslinked.
39. An electrically insulating material comprising the polymer blend of claim 35.
40. A highly loaded polymer comprising at least one linked voltage stabilizing agent in an amount greater than about 50%, by weight.
41. The highly loaded polymer of claim 40 wherein the linked voltage stabilizing agent is present in an amount greater than about 70%, by weight.
42. A method for making a polymer blend comprising blending a first polymer comprising at least one linked voltage stabilizing agent with a second polymer.
43. The method of claim 42 wherein blending is effected by physical admixing, melt blending, solvent casting, or dissolution.

44. The method of claim 42 wherein the first polymer is a highly loaded polymer comprising at least one linked voltage stabilizing agent in an amount greater than about 50%, by weight.

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